

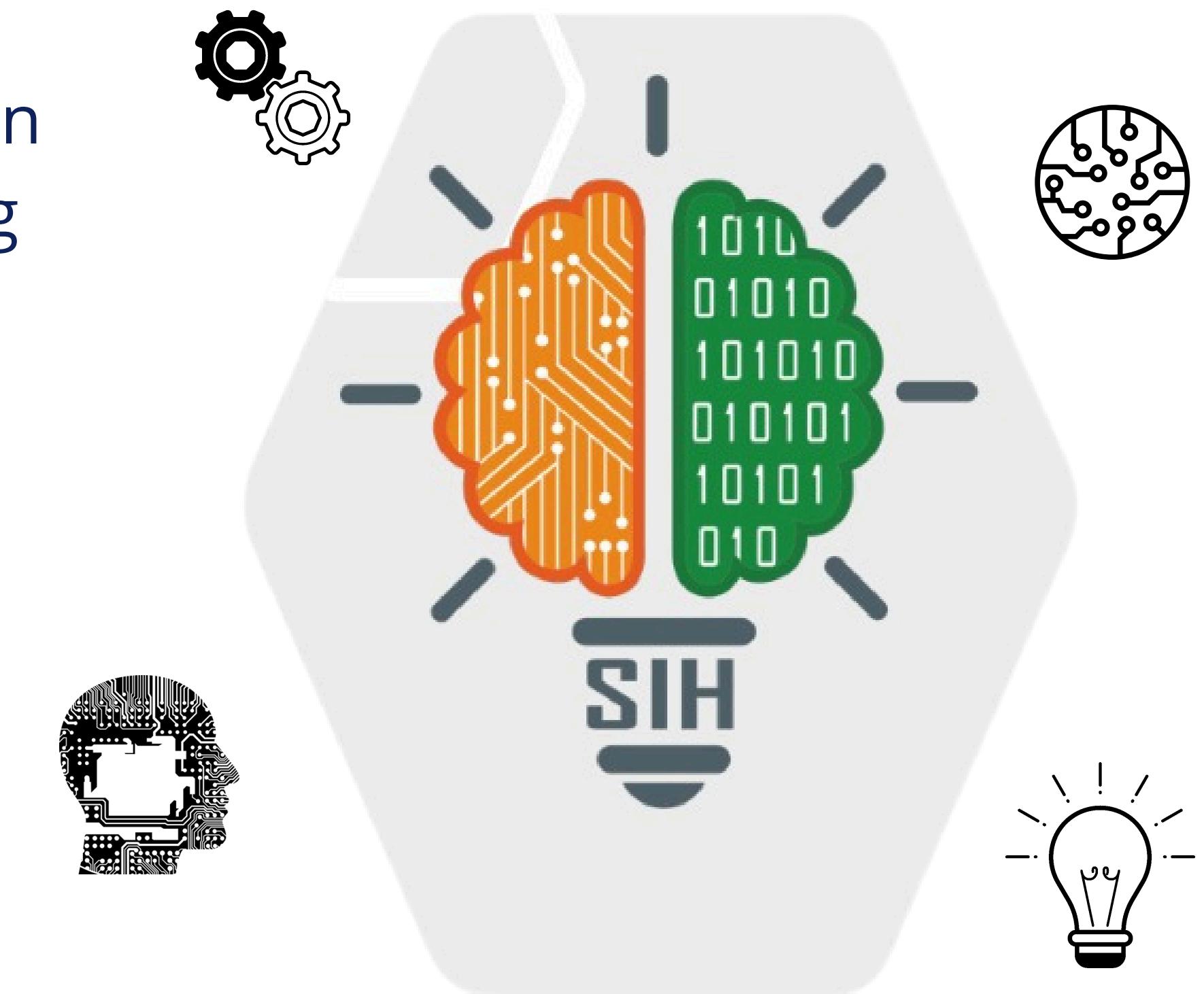


SMART INDIA HACKATHON 2024

(INTERNAL HACKATHON)



- **PROBLEM STATEMENT TITLE** - AI-Driven Insights and Automation Platform Using Navana Tech
- **PS CATEGORY** - Software
- **THEME** - Smart Automation
- **TEAM NAME** - AlgoXen





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PROPOSED SOLUTION

SMART THREAT DETECTOR

01

- Uses **RoBERTa** to identify threats.
- Analyzes audio for danger signals.

INSTANT AUDIO SCANNER

02

- Shows alerts when a threat is detected.
- Options: Share location, call police, mark false alarm.

QUICK ACTION ALERTS

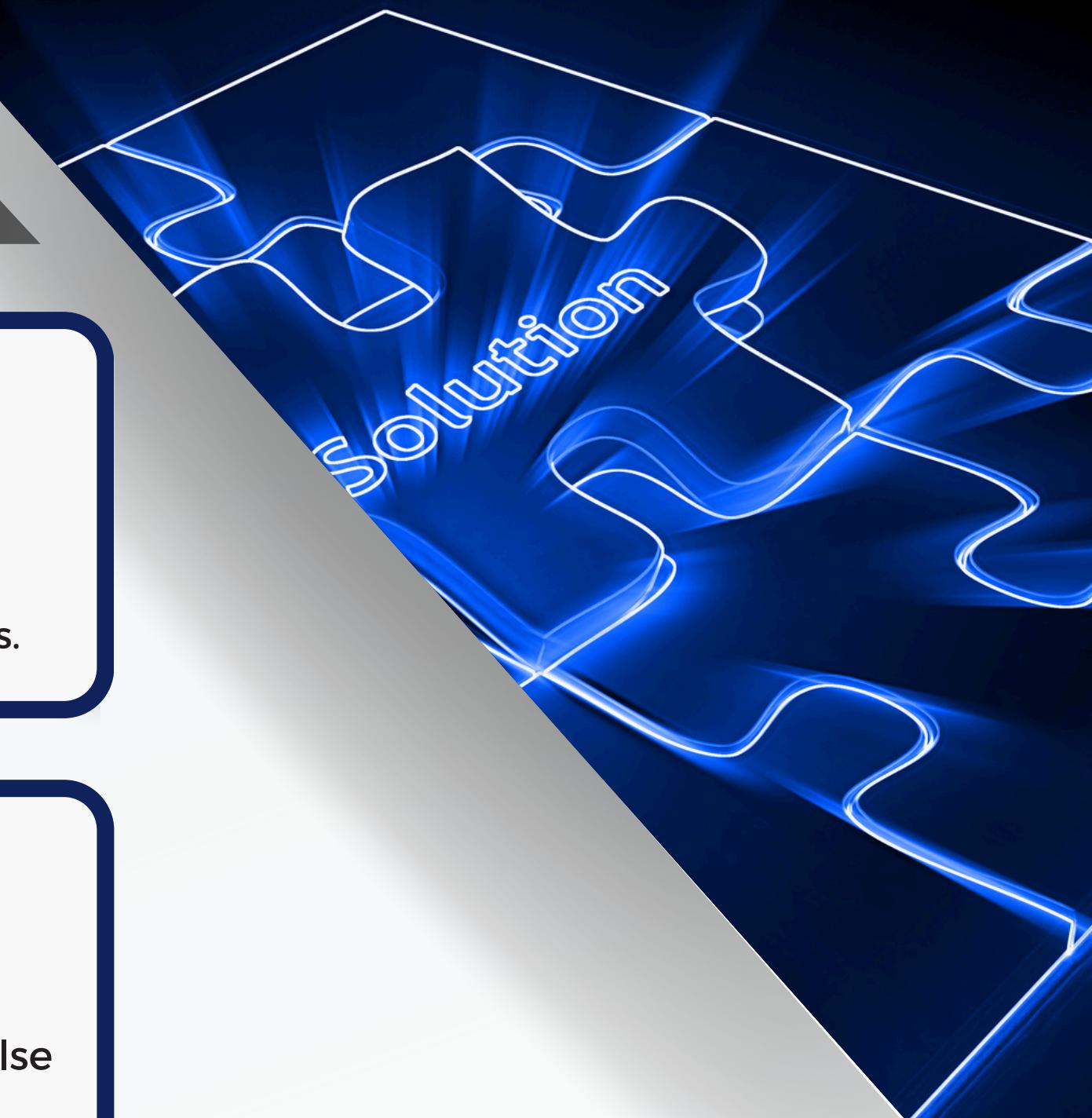
03

- Captures real-time audio on a website. (using **Azure** speech to text)
- Sends audio for immediate analysis.

EMERGENCY HELPER

04

- Displays your live **GPS** location
- Lets you call police or cancel false alarms.

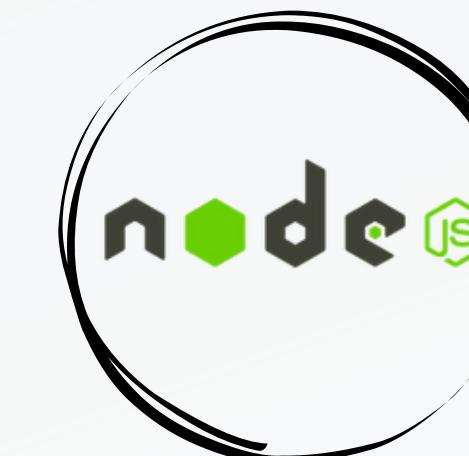
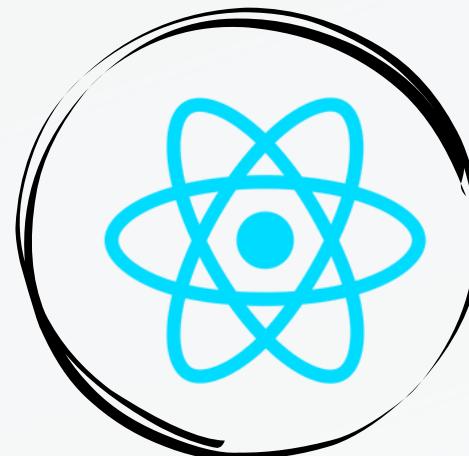


Disclaimer: Due to limited data and a focus on women's safety, this model may falsely flag benign words like "beautiful" as threats. Use the app if you feel insecure or doubtful.



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TECH STACK



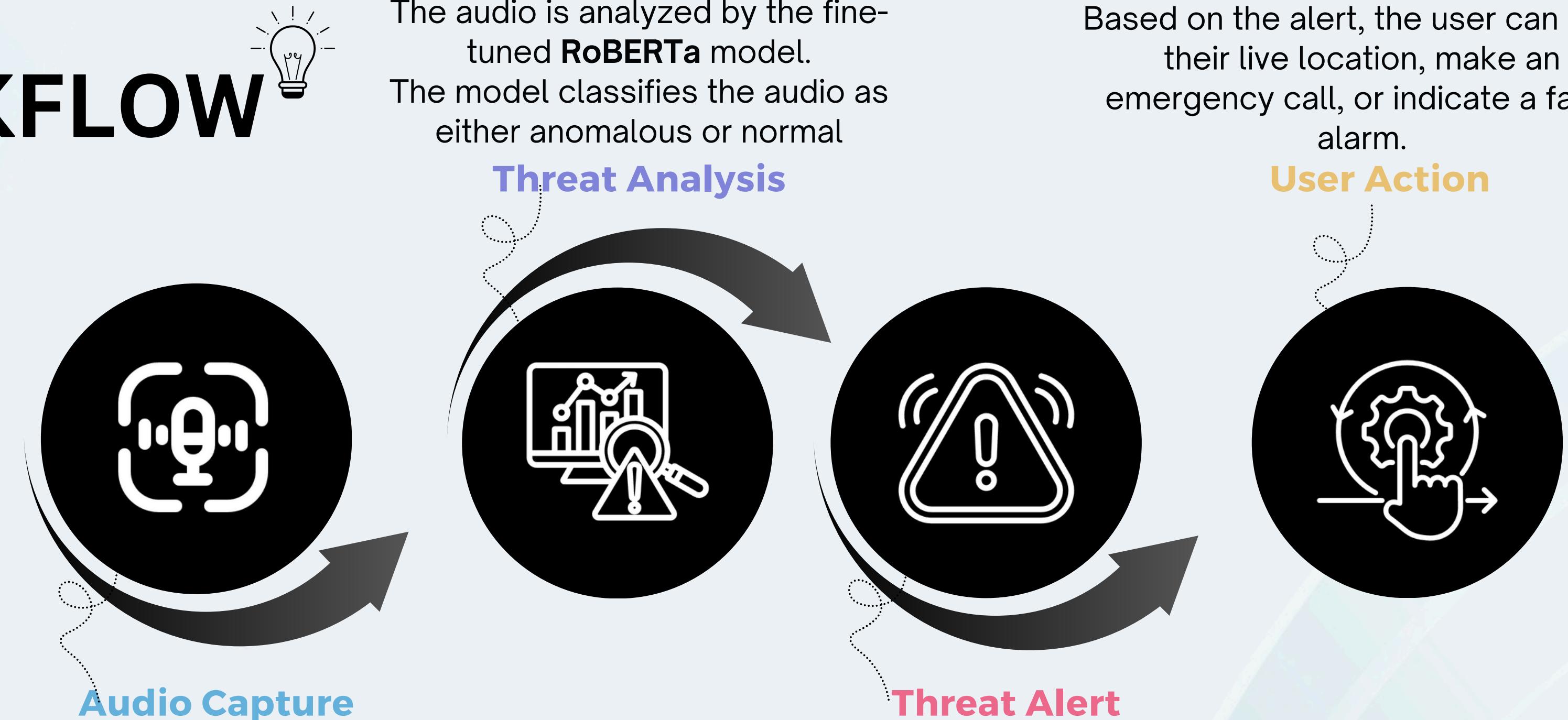
RoBERTa :

It is a HuggingFace model. It optimises the pretraining processes

AZURE :

It is a speech to text converter

WORKFLOW



The user provides audio input through a website.(using **Azure** speech to text)
The audio is streamed to the backend for processing.

If a threat is detected, an alert is displayed on the screen.
The alert is accompanied by options to send live location, call the police.

ADDRESSING KEY FEATURES FROM THE PROBLEM STATEMENT IN OUR PROTOTYPE

Real-Time Monitoring

The model continuously monitors audio input in real-time, using Azure's speech-to-text feature to detect and classify potential threats as they occur.



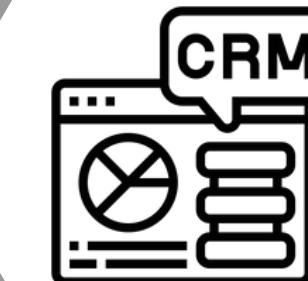
Anomaly Detection

The model analyzes audio input and displays alerts or anomalies on the screen if it perceives a threat to women's safety. This is achieved by fine-tuning the RoBERTa model.



Automated Decision-Making

If a threat is detected, the screen will display the threat with options to send live location, report to the police, call the police directly, or classify the alert as a false alarm





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CRM



We analyze user feedback to identify issues by location (clubs, roads, workplaces, homes) and create charts to visualize their frequency and patterns for targeted improvements.

User-Friendly Dashboards

Simple and Interactive:
Dashboards use clear charts and graphs to help users quickly spot trends. **Real-Time Updates:** Data is always current for the latest insights.

Effective Monitoring Tools

Anomaly Detection
The app converts speech to text and checks for signs of danger. **Instant Alerts:** Users receive notifications for quick action when something is detected.

Customization Options

Personal Settings:
Users can customise alerts, themes, and risk criteria. **Flexible Access:** Features are tailored to individual needs, from basic safety checks to detailed analytics.

Great User Experience

Easy Navigation:

The app offers smooth, intuitive sections for effortless use. **Accessible Design:** Adjustable text size and screen reader support ensure inclusivity for all users.

FUTURE PROSPECTS

(Police App for Threat Detection)

Centralized Threat Monitoring:

The Police App allows law enforcement to monitor and respond to potential threats reported by women through their safety apps in real-time.

Bridging Technology and Safety:

The app ensures swift action by connecting technology with public safety, making help accessible at the click of a button.

Advanced ML Analysis:

The app uses ML to analyze audio for threats, enabling quick incident response.

User-Friendly Interface:

The app equips officers with easy-to-use tools for effective community protection.



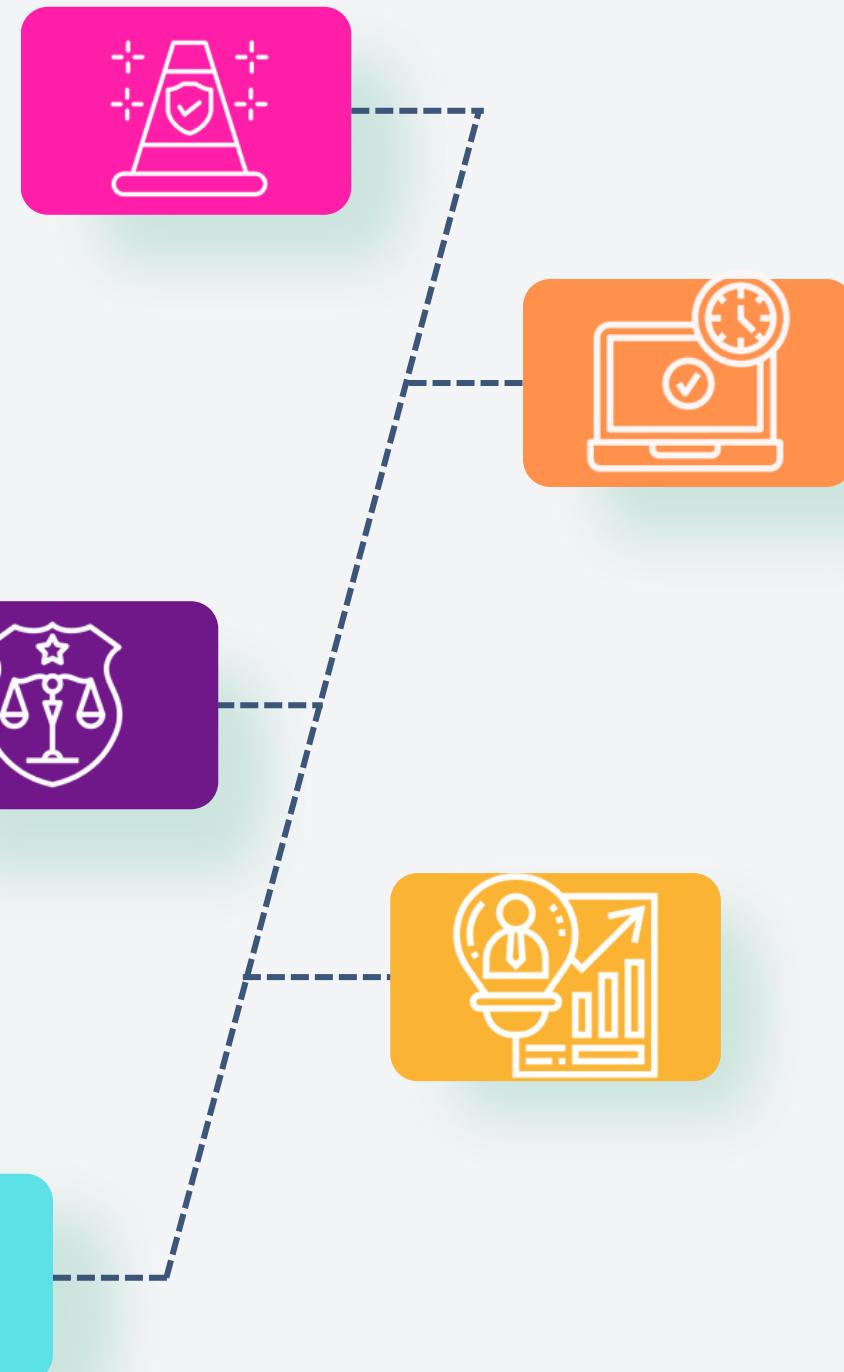
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LONG-TERM IMPACTS AND BENEFITS



Enhanced Safety and Awareness:

Real-time alerts improve personal safety and raise awareness of potential threats by monitoring audio data.



Support for Law Enforcement:

Provides valuable data to assist authorities in effectively responding to emergencies.

Privacy and Accuracy Concerns:

Continuous audio monitoring raises privacy issues and may result in false positives or negatives, affecting trust in the system.

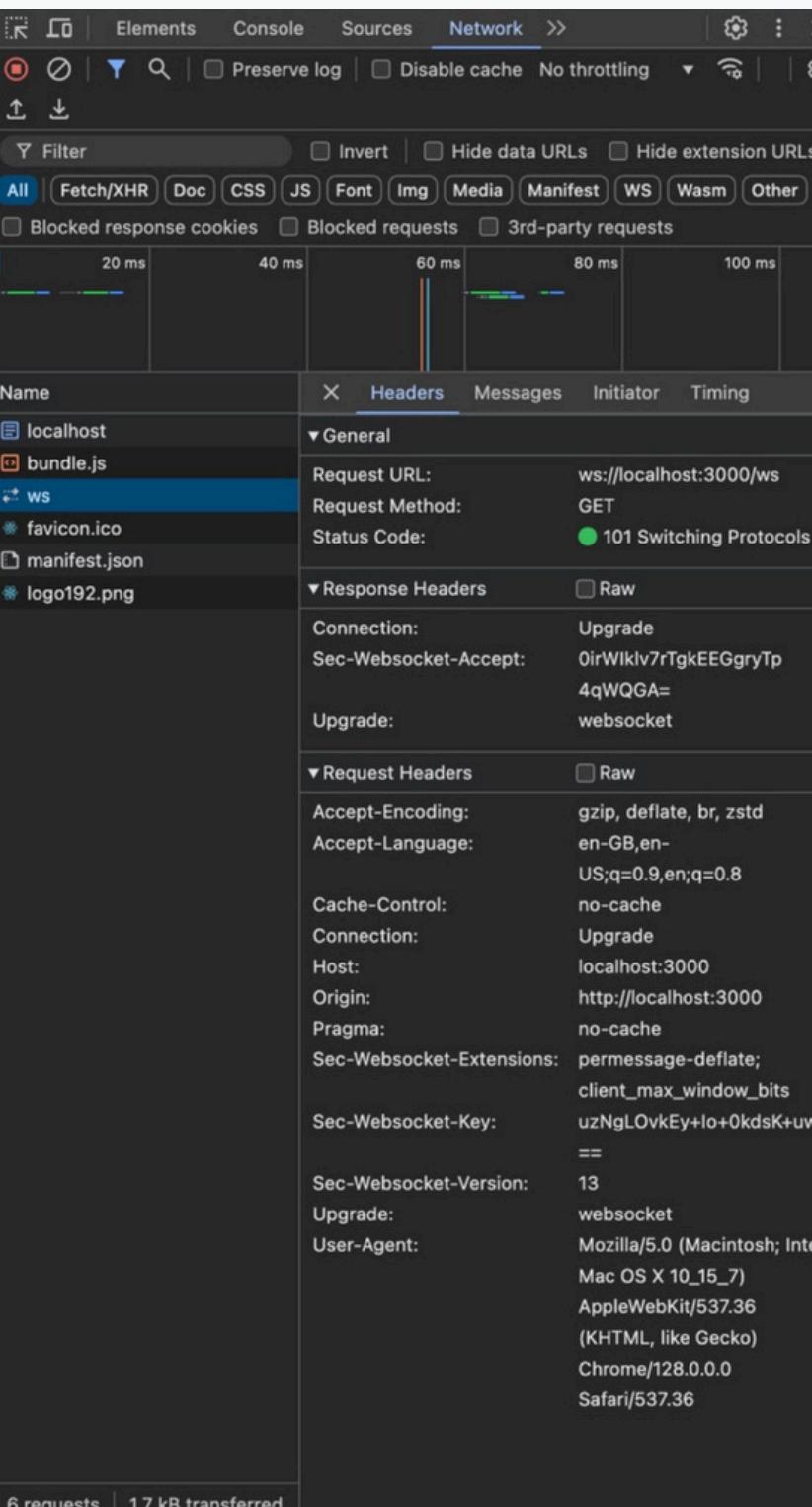
Real-Time Support and Accessibility:

Provides immediate feedback in emergencies and can be integrated into mobile apps or wearables, making safety tools widely accessible.

Empowerment and Data Insights:

Empowers individuals with added security while generating valuable data to inform safety trends and policies.

INTEGRATION OF NAVANA

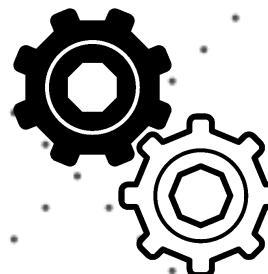


The screenshot shows the Network tab of a browser's developer tools. A single request to 'ws://localhost:3000/ws' is selected. The Headers section shows a 'Status Code' of 101 'Switching Protocols'. The Request Headers section includes 'Accept-Encoding: gzip, deflate, br, zstd' and 'User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/128.0.0.0 Safari/537.36'. The Response Headers section lists 'Connection: Upgrade', 'Sec-WebSocket-Accept: 0irWlkv7rTgkEEGryTp4qWQGA=websocket', and 'Upgrade: websocket'. The Headers tab is currently active.

- We encountered persistent challenges with Navana Tech, including **CORS errors** and **websocket closures**, despite extensive efforts and time investment, which were further complicated by insufficient documentation
- Due to these difficulties, we opted to implement the **Microsoft Azure Speech-to-Text API** in our model instead.



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Thank you very much!

